

[INTERCONNECT PROCESS AND METHOD FOR REMOVING METAL SILICIDE]

Abstract

A process for fabricating interconnects is provided. First, a substrate having a dielectric layer and silicon-containing mask layer on the dielectric layer is provided. The dielectric layer is patterned to form an opening. Thereafter, a metallic glue layer is formed over the silicon-containing mask layer and the interior surfaces of the opening. A metallic layer is formed over the substrate to fill the opening and cover the metallic glue layer. A thermal treatment process is next carried out so that the metallic glue layer reacts with the silicon-containing mask layer to form a metal silicide layer. A portion of the metallic layer is removed to expose the metal silicide layer. A solution mixture containing hydrogen peroxide, sulfuric acid, water and hydrofluoric acid is used to remove the metal silicide layer. The silicon-containing mask layer is also removed to expose the dielectric layer. The solution mixture containing hydrogen peroxide, sulfuric acid, water and hydrofluoric acid can remove the metal silicide layer completely without damaging the metallic layer.